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TECHNICAL NOTES

September 10, 1968

MOBILE VAN FIRE COMMUNICATION - DISPATCH UNIT

Units similar to that described herein have been in use in several states for a number of years. This particular unit was submitted as an employee suggestion and although it is not a new idea it is acknowledged by the Boise Fire Center and other field offices as being very well conceived. The various components are well described and collectively capable of fulfilling the communication and dispatch requirements on large fires.

Recognizing such limitations as speed in getting onto a fire and remote locations beyond the capability of a 2 1/2 Ton 4-wheel drive truck, this Technical Note is distributed for the information and guidance it affords those offices having a need for the many ideas and benefits successfully tested and used under actual fire conditions.

The following narrative description and photographs are presented for whatever use and improvement they may have for Bureau and other offices:

Prior to the improved unit, equipment was gathered from several districts indiscriminately - usually arriving at the fire by illogical sequences and by default assembled slowly and haphazardly into a semblance of a working communication center. This assemblage required from several hours to excesses of 36 hours at times to establish evan a slight, poorly working communication system.

Efficient fire suppression activities depend on organization, and the organization is very dependent on excellent communications between each member of the overhead team. This team must not only have rapid access to information of current events of the fire, but they must have past history and future logistics of the emergency. This problem at best is only approached under an ideal situation in controlled laboratory conditions. Our emergency problems occur in rugged terrain, away from a source of commercial electric power and telephone service and generally where transportation is a problem. Ideally the communication system should be in place and checked out before the fire organization would be required to use it. Since this is impossible, the alternative is to set up the communication system simultaneously with the fire organization. In Idaho this was done with a communication van. This van has these qualities:

1. The body is 8 ft. wide, 7 ft. high and 14 ft. long. This provides space for 2 dispatchers and a message handler with adequate comfort.

2. It was not assembled as a trailer but as an integral housing on a 2½ ton 4-wheel drive truck. This truck carries all supplies and the communication system to any place where a fire camp will be located. The van does not have to be unhitched, blocked up or tied down when it gets to its operating location. When it is there it is operable almost immediately.

3. The van was designed as an efficient field dispatching unit. This was not a make-do unit. This was designed in replica of a large fire load district office dispatch center. The dispatchers have 270° panorama vision of the fire camp from the large windows in the rear and sides of the van. If the van is properly placed near one end of a large 1000 man camp, the dispatchers, because they are up over the heads of those on foot, can see most all people and all activities in camp. This is a definite advantage for locating a person quickly if he is in camp.

4. The van has a large 4' x 8' desk that two dispatchers can work simultaneously on separate problems or together on common problems. Two other built-in desks on either side of the wall serve the message handler and the electronics technician.

5. The van is well stocked with all fire forms; not only dispatching forms, but time-keeping, accident, rental agreement, weather and many other forms. There are sufficient stationery supplies to last an entire season without restocking. Not only can a dispatcher expect to come into this communication van and start immediate operation, but other members of an overhead team will find enough forms and stationery for their particular job so that they can also begin immediately. This van tends to organize a fire overhead team very quickly.

6. All electric and electronic equipment in the van can be operated from three sources of power. Self-contained storage batteries have a large enough capacity to operate all facilities in the van for about 10 hours, without the use of charging equipment. These batteries are always on charge while the engine is running in the truck, i.e., driving to a fire keeps the batteries in a charged condition. The batteries are normally charged at a fire location by a self-contained gasoline engine-driven generator designed to be about 50 feet from the truck to reduce noise inside the van. This generator, of 5000 watts capacity, serves to power camp lights if needed. Commercial power, if available, can be supplied to a convenient outlet on the side of the van to charge the batteries and operate 120 V.A.C. lights in the van and the rest of the camp.

7. Two sets of lights are available for the van - fluorescent for 120 V.A.C. operation, camper trailer lights for 12 V.D.C. operation.

8. Four hi-gain antenna and a tower are transported by the vehicle by strapping them horizontally to the top of the van. Each antenna and tower can be erected in less than 1/4 hour. The erected antenna tower combination is about 30 foot high. Antenna cable has been precut to length and can be screwed into the antenna and radio with minimum delay.

9. The radio equipment has a capability of transmitting and receiving 8 channels. It was also designed so that two dispatchers could operate any two radio channels simultaneously and monitor six others. It was also designed with enough operator flexibility that either operator can work with his companion dispatcher channels without changing chairs. Besides containing 8 VHF/FM channels it does have an aircraft transceiver tuned to 112.9 mhz.

10. The electronic equipment is transistorized for lower power consumption. The van was designed with telephone convenience outlets so that commercial telephone service can be installed in a moment if facilities are available.

11. The van has an installed P.A. system that can be set up around the camp so that people can be paged to the van or to other locations. The P.A. is versatile enough to function in a small 25-man camp to the largest of 1,000. An auxiliary P.A. is always carried in the van for use in a spike camp or can be used as an auxiliary to serve an additional perimeter of 2,000 feet.

12. The van is fully equipped with map boards and maps, magnet board and other fire dispatching aids.

13. A portable radio repeater-base station combination is part of the van. The vehicle transports this repeater package to the base fire camp. If a project fire warrants a remote-control base station, a fire line repeater or an extra logistic channels this equipment in at the technician's disposal for immediate use.

14. Future equipment for next season's use will include automatic time announcer, automatic taping of all radio and telephone calls, and remoting of fire line receiver equipment for better coverage.

    Additional future adaptations to this van may include recently developed electronic devices, such as photo scanners, portable magnetic television camera - recorder units and playback monitors, automatic line plotters, automatic event recorders.

15. This van was sent to both small and very large fires that occurred in Idaho last summer. Two conclusions were reached by everyone on the overhead teams: (1) the team was immediately organized when the van reached the fire camp. Incidentally the van rolled out of the district equipment yard with an electronic technician and a trained dispatcher aboard shortly after the initial attack tanker. On most any fire of considerable potential, both the technician and the dispatcher made the initial base camp setup, that is, raised the antennae and got the electric generator operating. They both organized with the camp team and logistic communications. The technician served as alternate dispatcher on small fires and initial attack. Thirty minutes' work by these two trained men saved 18 to 24 hours of costly organization entanglement here-to-fore experiencedduring past fire seasons. A side benefit of this rapid organization build-up was the effect of having incidental record-keeping supplies normally required for project fire work. Having these supplies on hand effected a smooth transition from initial attack into project fire problems. Prior to the advent of this van and its supplementary supply of materials, hours were spent getting these supplies for properly recording the fire's progress. (2) The greatest tangible benefit was having all the electronic and communication equipment in a logical, workable dispatcher's office.

    Judging from the man hours saved this first summer -- this van and the manner in which it was efficiently used a tangible benefit can be accurately computed both for a 25 man initial attack fire or a 500 man project fire.

    For a 25 man initial attack fire:

    1. This involves communication to outline initial fire line tactics.

    2. Scouting communication problems, done by aircraft, truck and foot.

    3. Getting meals coordinated with present manpower and future manpower.

    4. Getting crews relieved properly and on time.

    5. Getting a logistics routing routine established for the longer term fire if it becomes necessary.

This unit can save at least 10 hours per man in organizational problems, or about 250 man hours for each initial attack fire. A district with a fire occurrence of 100 initial attack fire could realistically save 2500 man hours per season.

The communication and organizational problems are more complex on project fire work, principally because they involve a widely segregated group of smaller independent work projects. They can only be solidly integrated with adequate communication facilities and rigidly controlled organizational discipline. It is believed that with adequate communication at least 200 man hours can be saved each day on project fire problems.

The attached photographs show some of the van's additional features. Photo 1 shows a combination rear bumper, steps and standing platform. The steps and platform are folded and stored while the van is in transit. They are unfolded and locked into place at the fire camp as shown in photo 3. Personnel, other than dispatchers, who have no business inside the van can step up to either of the sliding rear windows and converse with the dispatcher. Photo 2 shows a closeup of the dispatch desk and the rear access windows. Photo 3 also shows the rear access door that can be locked from the inside to prevent personnel from crowding inside the van.

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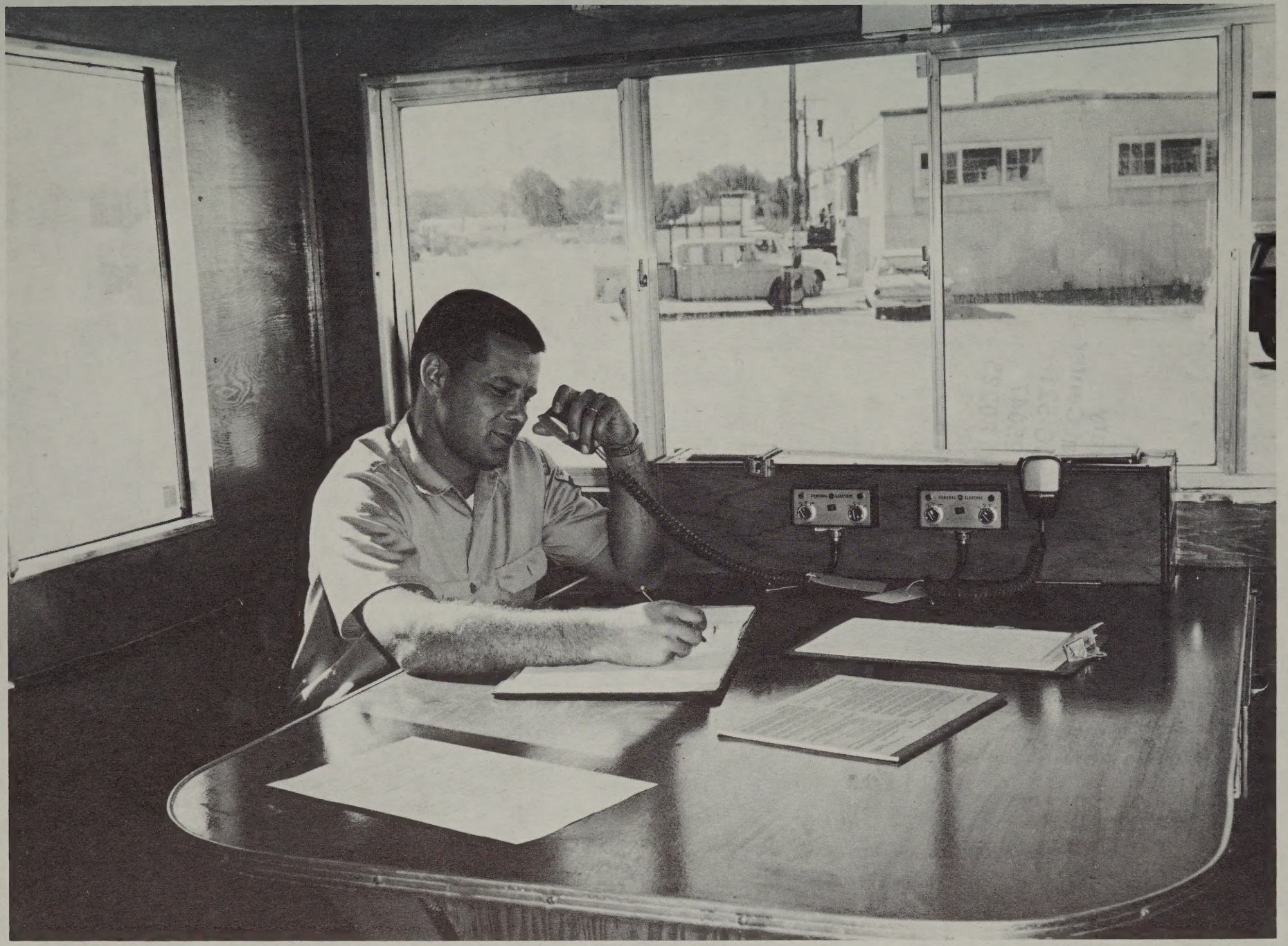
TRUCK BODY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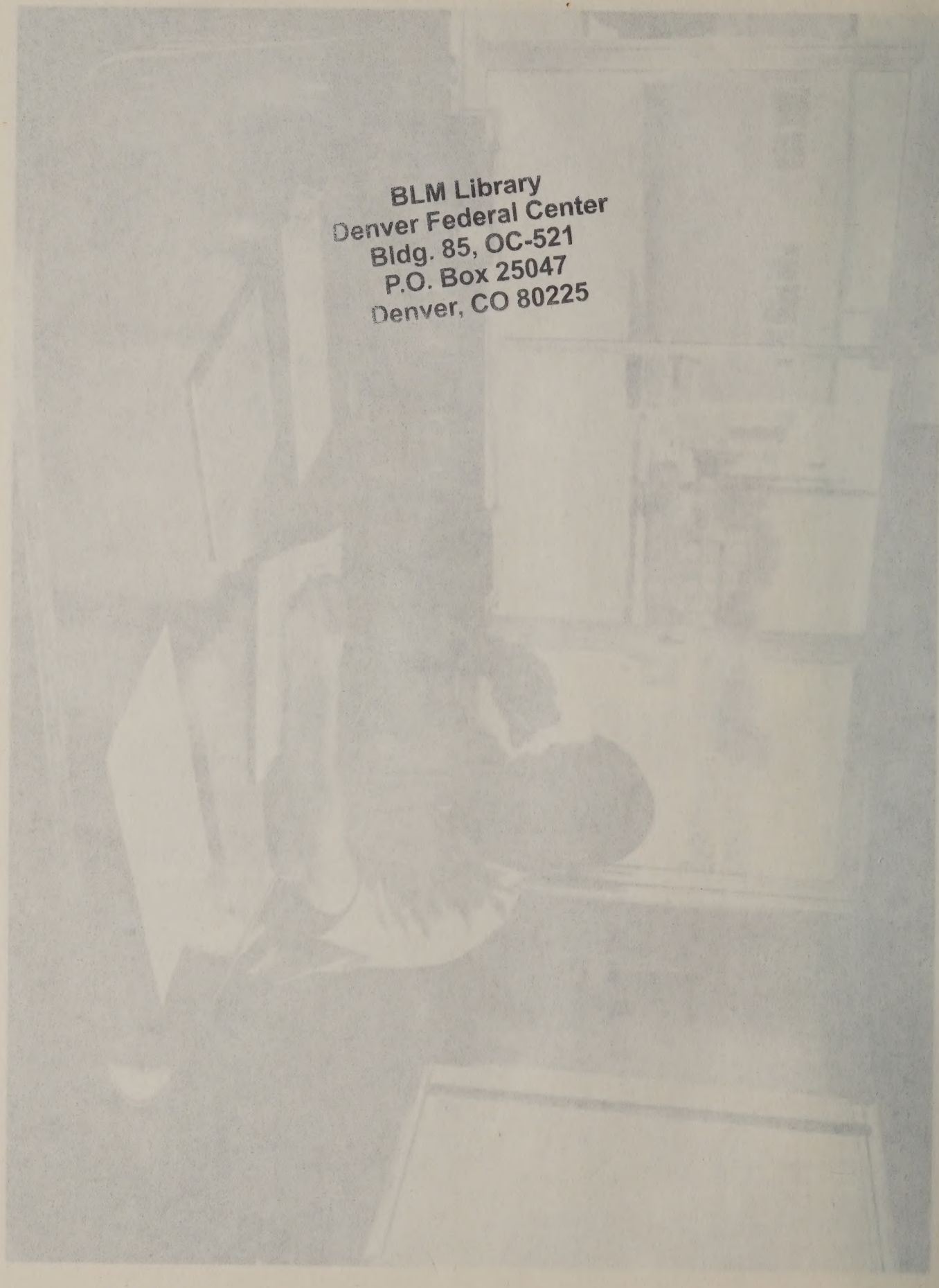

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